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and east the steppes towards the Caspian and the 133
Kuma-Manych depression are barren and stony or sandy.

Coasts

The coast of Ciscaucasia is flat, and the only ports [504] •
worth noting are Anapa, Temryuk, and Yeisk. The Ciscaucasian shores of the Caspian Sea are surrounded by steppes and are flat throughout. They are formed chiefly of the alluvial land of the deltas of the rivers Terek and Kuma.

River System

The rivers of Ciscaucasia rise in the central Caucasus. There are three river basins, corresponding with the three administrative divisions.

The River *Kuban* rises on the northern side of Mount Elbruz. It is formed by the Khursuk and the Uchkulan, which unite at Uchkulan. It retains its character as a mountain stream until it enters the plain at Batalpashinsk, at a height of 1,075 ft. The middle course extends from the Cossack settlement of Nevinnomysk as far as Ekaterinodar. The river bed is wide, but the river itself is a mere streamlet except in times of flood. After the Kuban turns definitely westward the fall is only about 20 inches in a mile.

The largest tributary of the Kuban is the Laba [312]
(200 miles), a canal from which at Chamlik irrigates several thousand acres of steppe land. Another large tributary is the Byelaya (150 miles). The Kuban flows by many mouths, forming several islands and *limans* (marshy lagoons), into the Gulf of Kyzyltash. The river is frozen from December to March. In the lower part of its course inundations are frequent, and the district is marshy.

The *Terek* (382 miles) rises on the slopes of Mount Kazbek at Zilga-Khokh, and pierces the mountain range by the Dariel gorge, which it leaves at Vladikav-

205 on delivery, was in existence. Parcels in transit for Persia went duty free.

206 All the principal towns have telegraphic communication with other parts of the Caucasus and with Russia. The lines follow the railway routes, and towns not on these are connected with the main telegraph system by branch lines.

Telephonic communication between Tiflis and Baku was established in 1911, and it was intended, should the innovation prove a financial success, to extend the system to other large towns.

(2) External

(a) *Ports and Roadsteads*

(i) *On the Black Sea.*

504 In *Anapa Roads* are two anchorages, the outer exposed from north-west to south-south-west, the inner (for small craft) sheltered from south-west winds. A pier, 175 yds. long, runs out on the north of the town. The Government proposed to carry out harbour works there. The port does a small trade in grain, fur, and wax.

Batum.—The bay of Batum is about a mile and a half wide from east to west and half a mile deep from north to south. From the southern shore, in a north-north-westerly direction, extends a mole 275 yds. long, from the head of which another mole, known as the Petroleum Mole, carrying rails and petroleum pipe lines, runs south-west for 440 yds. The harbour thus formed, known as the Western or Petroleum Harbour, has a dredged depth of 24–30 ft., with berths for 20 steamers. A breakwater running north-east from the first mole for 275 yds. forms the Eastern or Coasting Trade Harbour, which is only 7–17 ft. deep, and needs constant dredging. There is also a mole, 200 yds. long and 60 yds. wide, extending towards the north-north-east from the north-western

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extremity of Burun Tabia, which is the western point of the bay. [504]

The harbours, though approachable in all weathers, are exposed to the violence of south-westerly gales; and in 1910 the British Consul stated that complaints were general with regard to their unsafe condition. In 1911, on the subsidence of one of the moles, [653] a scheme was framed which comprised considerable extensions and improvements. The funds provided by the Congress of Harbour Authorities were at first insufficient, but in 1913 the sum of £750,000 was provisionally assigned. The preliminary work and surveys were completed by June of the following year, but on the outbreak of war the undertaking had to be abandoned.

The dangers incurred by shipping in bad weather and the inadequacy of the port to deal with increased traffic resulting from the manganese trade have for years impeded the commercial development of Batum. From 1878 to 1886, however, it enjoyed eight years of exceptional prosperity as a 'free port'. Even after the withdrawal of this privilege in 1886, the petroleum [459] export maintained trade at a high level until the labour disturbances of 1903–5, from the disastrous effects of which the port has not yet recovered. The total value of its trade in 1913 was £5,134,732, of which £4,552,200 represented exports and £582,532 imports. Coasting trade, carried on exclusively by Russian ships, was very prosperous in that year.

Gagri is an open roadstead, providing anchorage for small vessels in 5–6 fathoms. The Government had in contemplation a scheme to build a harbour of refuge there, for which a sum of £211,000 was assigned in 1913.

Gelendjik Bay, which is 2½ miles long and 1½ miles deep, is sheltered from the violent north-east winds. Light vessels find good anchorage in 12 ft. of water.

The open roadstead at *Gudaut* is used by coasters only.

Novorossiisk harbour has been artificially formed by the construction of two moles, each half a mile long. On

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504 [413] The shore front there are 7 piers with depths varying from 19 to 29 ft. at their outer ends. Five of these piers are owned by the Vladikavkaz Railway Company, one by the Russian Steam Navigation and Trading Company, and one by the Russian Standard Oil Company, and all are connected by double lines of rail with the terminus railway station. There is also on the south-west of the harbour a mole, used by coasters, with a depth of 23 ft. alongside. Altogether, there are berths for about 22 steamers.

In autumn and winter anchorage at the head of the bay is rendered very unsafe by the *bora*, a violent north-easterly wind which then prevails; vessels are sometimes unable even to enter.

The harbour is lit by electric light and there are ample loading facilities. The Vladikavkaz Railway storehouses can take 70,000 tons of grain. An iron foundry close to the harbour makes marine boilers and executes repairs.

[439] Novorossiisk has a considerable export trade in grain and mineral oil, amounting to about £5,000,000 a year in value. The imports are inconsiderable, and consist chiefly of machinery, hardware, and coal.

Poti harbour affords safe protection to shipping, but is practically unapproachable in bad weather. An outer and inner basin are formed by two moles built of concrete blocks. Another mole in the middle of the outer basin carries two lines of rails and several large sheds. In the inner basin there are berths for eight or ten steamers and an elevator for loading manganese. The length of quayage is 1,500 yds.

[439] In 1913 the value of the exports, of which manganese was by far the most important, was £835,972, whilst the value of the imports for the same year was only £7,350.

Sochi is used by sailing vessels, which anchor off Sochi town in 16 fathoms. Steam vessels are able to anchor closer inshore. Sochi was included in the Government scheme for the construction of ports of refuge on this coast.

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Sukhum Kale in Sukhum Bay affords indifferent anchorage in 6–8 fathoms. There is a quay, 56 yds. long, built on piles. A sum of £370,000 was assigned in 1913 for improvements to this port. 504

Tuapse roadstead, open to the south and south-west, is protected from north-west winds, and affords good anchorage in 6 fathoms. Two moles, half a mile apart, converge to form the old harbour, the depth inside the eastern mole being 23 ft. When the railway was brought to Tuapse, it was realized that the existing harbour accommodation would be inadequate. A concession to build a safe harbour was granted to a French firm in 1909, but, as they failed to fulfil their agreement, the State took the work over in 1913, and it was nearing completion in the autumn of 1914. [653]

(ii) *On the Sea of Azov.*

The Caucasian ports on the Sea of Azov are as yet undeveloped, and relatively unimportant.

Akhtar Bay is so shallow that steamers have to anchor 9 miles from the coast, steam barges bringing out the cargoes.

Temryuk stands on a peninsula dividing two shallow lakes. Its harbour is connected with the sea by a channel 12 ft. deep, navigable by light-draught steamers. There are two piers, but vessels anchor out in the bay. A considerable trade is done in grain and fish.

Yeisk stands at the base of a sandy spit, on the east of which an artificial harbour has been dredged to a depth of 12 ft., with an inner basin 350 yds. long. Projects have been considered for the construction of a deep water port there, to be connected with Ekaterinodar by a branch line.

(iii) *On the Caspian Sea.*

Baku stands on a crescent-shaped bay, 7 miles wide from point to point, protected on the south by Cape

504 Bailov, and on the east by the Kargin Islands, which lie at the entrance to the bay, 7 miles out at sea. A line of quays extends 4 miles, and there are 14 piers, owned by various shipping companies, each company having its own wharf, warehouses, and offices. In [655] 1914 the State assigned £100,000 for the building of other wharves, although there was already ample accommodation for the steamers engaged in oil transport and in the Transcaspian trade. At Cape Bailov there is a capacious dock.

Derbent (Derbend), 154 miles to the north-west of Baku, is an open roadstead, affording no protection from the north and south-east winds, which blow with great violence at certain seasons. There are no harbour facilities, but various shipping lines visit the port regularly. There is a considerable local trade in fish.

Lenkoran, on a shallow bay, offers only exposed and indifferent anchorage. Large ships lie 3 miles out to sea. There is a considerable trade in boxwood.

Petrovsk, 81 miles north-west of Derbent, has a fair harbour, formed by a curved stone mole, 500 yds. long, on the south. There is a wooden pier on the north, and both mole and pier are connected by lines of rails with the railway station. There are berths for about 10 steamers. The quays and wharves are lit with electric light. The port is closed by ice in January only, and in the winter months, when the Volga is [439] frozen, Petrovsk does a considerable transit trade between Russia in Europe on the one side and Persia and Transcaspia on the other. It also exports oil from Grozni to the Volga. All the Caspian Sea steamship companies call at Petrovsk regularly.

(*b*) *Shipping Lines*

505 (i) *Russian.*—The Russian Steam Navigation and [477] Trading Co. had almost a monopoly of the Black Sea shipping services, and, under a contract due to expire in 1928, received an annual subsidy of £98,000 from the State. It had piers at the ports of Batum and

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railways and roads, or of adequate accommodation at the ports. A further disadvantage lies in the lack of union among the population, accentuated of late by the increase of political power among the Armenians. The exodus of the Turks, who owned the prosperous tea and tobacco plantations, was an economic loss, though they may be replaced by the Armenians, Tatars, or Georgians.

The British consular report for 1913 described Caucasia as a poverty-stricken country, making only the slowest progress. This estimate seems harsh in view of the increasing exports from the three chief ports and the development of the large Russian oil trade. The oil-fields, however, are exploited by international capital, so that most of the profits derived from the trade leave the country. It should be noted, too, that in the new fields oil is found at greater depths than in the old, so that, unless American deep-drilling methods are introduced, production may cease to be profitable. The manganese industry has made great advances, but so far has yielded small profits only, on account of the cost of transport. The increased value of the cereal exports has chiefly benefited a few large landowners.

The fact remains that Caucasia contains great natural wealth, little exploited as yet. There are openings for development in the use of its forests and water-power; in the exploitation of minerals and mineral springs; in the cultivation of fruit, vines, tea, and, with the help of scientific irrigation, of cotton; and in the production of silk.

Novorossiisk has already shown a remarkable increase in prosperity, although, since its bombardment by the Turks, trade has temporarily deserted it. It was long since pointed out that, with improved harbour facilities and the increase of oil production, Batum had a fair chance of becoming a port of world-wide importance.

489 Georgian Military Road connecting Dzaudzhikau
[491] with Tbilisi. Aviation, on the other hand, is very well developed.

The transportation systems of the various sub-areas are as follows:

489 Azerbaijan SSR: Transportation based
496 on railroads. The chief rail junction is Baku, the terminal of the Baku-Rostov, Baku-Tbilisi, and Baku-Dzhul'fa-Tbilisi lines. The main lines are partially electrified as are the railroads on the Apsheron Peninsula. The main
[304] port is Baku (petroleum-loading). The Kura River is navigable as far as Yevlakh. The air-
[508] fields are concentrated around Baku and Kirovabad. The sub-units are well served by railroads. Stepanakert, the capital of the High-Karabakh AO, is the terminal of a trunk line coming from Yevlakh. Dzhul'fa, in the Nakhichevan' ASSR, is an important junction on the Baku-Tbilisi-Tabriz (Persia) lines.

Armenian SSR: Railroads are the chief means of transportation. Important junctions are Zangibazar (on the Leninakan, Zanga, and Dzhul'fa lines), and Leninakan on the Tbilisi,
[491] Dzhul'fa, Artik, and Kars (Turkey) lines. The highways along the slopes of the Lesser Caucasus are relatively good. Yerevan is the avia-
[309] tion center of the republic.

Georgian SSR: Transportation mostly based on railroads. The main lines are the Baku-Tbilisi-Batumi, and the Tbilisi-Sukhumi-Tuapse lines, with Tbilisi, Khashuri, and Samtredia as the chief junctions. The Georgian railroad system has at the same time a whole

series of trunk lines, the most important of which are the Mirzaani, Telavi, Stalinir, Bakuriani, Vale, Sachkere, Tkibuli, Tskhaltubo, Poti, and Zugdidi lines. The main port of the republic is Poti. The military roads have primarily historical value. Aviation is centered around Tbilisi. The capitals of the sub-units (Stalinir, Batumi, Sukhumi) have railroad connections, and Batumi is at the same time one of the principal petroleum loading ports of the USSR.

Astrakhan' Oblast: Transportation is based on waterways (the Volga and the Caspian Sea), and more recently on railroads. The principal railroad line is the Saratov-Astrakhan'-Kizlyar line, the Astrakhan'-Kizlyar section of which was recently built. Chief port of the area is Astrakhan' connected by a 125-mile long channel through the shallow waters of the Caspian Sea with Astrakhan' Port. Astrakhan' is above all an oil port; in addition to this it is an important aviation center.

Groznyy Oblast: Transportation based on railroads. The oblast is well served by the two Baku-Rostov main lines (along the Sundzha, and the Terek Rivers), and by the new Kizlyar-Astrakhan' line. The chief junction is Gudermes.

Dagestan ASSR: On the Baku-Rostov line. The center of the railroad system is Makhachkala, the terminal of several spurs. Makhachkala is an important grain, cotton and petroleum port as well, trading mostly with Russian Central Asia, and with Persia. There are also several airfields around the city.

489
496 Stavropol' Kray: Transportation based only on railroads. The chief line is the Baku-Rostov line with spurs penetrating into the steppe and into the Greater Caucasus. Of these trunk lines, which are sometimes electrified, the most important are the Dzaudzhikau, Alagir, Nal'chik, Kislovodsk, Ust'-Dzegutinskaya, Budennovsk, Blagodarnoye, and Divnoye lines. All the capitals of the sub-
[508] units have railroad connections. Airfields are concentrated in the health resort area, around Pyatigorsk.

Krasnodar Kray: Transportation based partially on railroads, partially on coastal shipping. The kray has the most developed railroad system in the Caucasus. The chief lines are the Baku-Rostov, and the Novorossiysk-Stalingrad lines crossing each other at Tikhoretsk. The other important junctions are
[504] Armavir, Krasnodar, and Kropotkin. There is a whole series of good harbors in the area. Tuapse, an oil port, and Novorossiysk, a grain and oil port, are especially important. The harbors on the Sea of Azov are of less impor-
[508] tance. There are several airfields in the area.

Rostov Oblast: Transportation based on waterways (Don; Sea of Azov), and on railroads. The center of the railroad system is Rostov.
[504] Of the ports, Taganrog (coal and grain shipping), and Rostov are the most important.

496 The distribution of the various means of transportation in the entire Caucasus is as follows:

Railroads: The essential means of

b[1]. 2 Harbors, Navigable Rivers, Channels

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